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EXAMINER
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MIGGINS, MICHAEL C

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1772

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/270,673  
Filing Date: March 19, 1999  
Appellant(s): UEDA ET AL

**MAILED**  
**JUN 14 2007**  
**GROUP 1700**

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Felix D. Ambrosio  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 2/5/07 appealing from the Office action  
mailed 1/3/06.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct. It is noted that the summary of claimed subject matter is clearly directed to sole independent claim 22.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

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4,847,135	Braus et al.	07-1989
4,540,630	Wegner et al.	09-1985
3,000,076	L. A. Runton et al.	09-1961
4,942,075	Hartel et al.	12-1957
3,675,980	Stiff et al.	08-1970
3,950,599	Board, Jr.	04-1976
4,559,248	Sumiyoshi et al.	12-1985

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-23, 26-29, 33 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braus et al. (U.S. Patent No. 4,847,135) in view of Wegner et al. (U.S. Patent No. 4,540,630) and Runton et al. (U.S. Patent No. 3,000,076).

Braus et al. teach an annular sliding (since guide bushings and shells are taught, see column 2, lines 7-8 and column 2, lines 5-51) fluoroplastics member having a composite structure which mainly consists of fluorine plastics (PTFE) (column 3, lines

48-58) and short fibers (aramid) (column 4, lines 3-15) (applies to instant claims 22 and 27).

Braus et al. disclose applicant's invention substantially as claimed. However, Braus et al. fail to disclose a sliding member wherein 20 or 50 or more weight percent of short fibers by weight of a total amount of said short fibers are oriented in a direction along which a burden of a load is large or oriented in an axial direction and wherein the member contains a lubricant.

Wegner et al. disclose a sliding member wherein 20 or 50 or more weight percent of short fibers by weight of a total amount of said short fibers are oriented in a direction along which a burden of a load is large (since the short fibers, column 4, lines 61-68, are all oriented in the longitudinal direction or transverse to the longitudinal direction, column 5, lines 18-27, column 5, lines 45-50 and applicant claims an axial direction) or oriented in an axial direction (column 5, lines 45-50) and wherein the member contains a lubricant (column 3, lines 19-26) for the purpose of providing high resistance to fatigue, wear resistance and bonding stability (column 2, lines 1-16) (applies to instant claims 22-23, 26-27 and 33).

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided a sliding member wherein 20 or 50 or more weight percent of short fibers by weight of a total amount of said short fibers are oriented in a direction along which a burden of a load is large or oriented in an axial direction and wherein the member contains a lubricant in the annular sliding member of

Braus et al. in order to provide high resistance to fatigue, wear resistance and bonding stability as taught or suggested by Wegner et al..

Braus et al. disclose applicant's invention substantially as claimed. However, Braus et al. fail to disclose wherein the composite structure is a structure in which a number of fluoride plastics layers containing fibers are stacked in a radial direction, and each of said stacked layers has a wavy sectional shape which undulates in an axial direction, wherein overlapping faces of said layers are integrally coupled to one another.

Runton et al. disclose a composite structure which is a structure in which a number of fluoride plastics layers containing fibers are stacked in a radial direction, and each of said stacked layers has a wavy sectional shape which undulates in an axial direction, wherein overlapping faces of said layers are integrally coupled to one another (column 2, lines 1-71 and Figs. 1-6) (applies to instant claims 28-29) for the purpose of providing improved load strength.

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided a composite structure which is a structure in which a number of fluoride plastics layers containing fibers are stacked in a radial direction, and each of said stacked layers has a wavy sectional shape which undulates in an axial direction, wherein overlapping faces of said layers are integrally coupled to one another in the annular sliding member of Braus et al. in order to provide improved load strength as taught or suggested by Runton et al..

Runton discloses wherein each layer is coupled so that the layers do not move relative to each other in the axial direction (column 2, lines 40-47 and Fig. 4).

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Braus et al. (U.S. Patent No. 4,847,135) in view of Wegner et al. (U.S. Patent No. 4,540,630) and Runton et al. (U.S. Patent No. 3,000,076), as applied to claims 22-23, 26-29 and 33 above, and further in view of Hartel et al. (U.S. Patent No. 4,942,075).

Braus et al. disclose applicant's invention substantially as claimed. However, Braus et al. fail to disclose that the fibers are oriented in a circumferential direction.

Hartel et al. disclose fibers oriented in a circumferential direction in an annular body (column 3, lines 22-41 and Fig. 1) for the purpose of providing increased load strength (column 2, lines 17-63).

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided wherein the fibers are oriented in a circumferential direction in the annular sliding member of Braus et al. in order to provide increased load strength as taught or suggested by Hartel et al..

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Braus et al. (U.S. Patent No. 4,847,135) in view of Wegner et al. (U.S. Patent No. 4,540,630) and Runton et al. (U.S. Patent No. 3,000,076), as applied to claims 22-23, 26-29 and 33 above, and further in view of Stiff et al. (U.S. Patent No. 3,675,980).

Braus et al. disclose applicant's invention substantially as claimed. However, Braus et al. fail disclose wherein the fibers are oriented in a spiral direction.

Stiff et al. disclose an annular member wherein the fibers are oriented in a spiral direction (column 5, lines 1-65) for the purpose of providing improved load strength.

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided wherein the fibers are oriented in a spiral direction in the annular sliding member of Braus et al. in order to provide improved load strength as taught or suggested by Stiff et al..

Claims 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braus et al. (U.S. Patent No. 4,847,135) in view of Wegner et al. (U.S. Patent No. 4,540,630) and Runton et al. (U.S. Patent No. 3,000,076), as applied to claims 22-23, 26-29 and 33 above, and further in view of Board, Jr. (U.S. Patent No. 3,950,599).

Braus et al. disclose applicant's invention substantially as claimed. However, Braus et al. fail to disclose an annular member wherein plural filaments (aramid) are stitched to said composite structure.

Board, Jr. disclose an annular member wherein plural filaments (long aramid fibers) are stitched to said composite structure (column 6, lines 33-68 and Figs. 1-3) (applies to instant claims 30-31) for the purpose of providing improved load strength.

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided an annular member wherein plural filaments (aramid) are stitched to said composite structure in the annular sliding member of Braus et al. in order to provide improved load strength as taught or suggested by Board, Jr..



Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Braus et al. (U.S. Patent No. 4,847,135) in view of Wegner et al. (U.S. Patent No. 4,540,630) and Runton et al. (U.S. Patent No. 3,000,076), as applied to claims 22-23, 26-29 and 33 above, and further in view of Sumiyoshi et al. (U.S. Patent No. 4,559,248).

Braus et al. disclose applicant's invention substantially as claimed. However, Braus et al. fail to disclose an annular member wherein at least one surface of said annular sliding fluoroplastics member is covered with an expanded graphite sheet.

Sumiyoshi et al. disclose an annular member wherein at least one surface of said annular sliding fluoroplastics member is covered with an expanded graphite sheet (column 3, lines 1-68, column 7, lines 1-68 and Figs. 1-4) for the purpose of providing improved heat resistance.

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided an annular member wherein at least one surface of said annular sliding fluoroplastics member is covered with an expanded graphite sheet in the annular sliding member of Braus et al. in order to provide improved heat resistance as taught or suggested by Sumiyoshi et al..

#### **(10) Response to Argument**

Appellant arguments are addressed in the order presented.

Appellant argues that Braus does not disclose a plurality of layers stacked in a radial direction. However, Runton discloses a plurality of layers stacked in a radial

direction (column 2, lines 1-71 and Figs. 1-6). It is alleged that the examiner has equated the primer 2 with the claimed fibers. However, the examiner has not equated the primer 2 with the claimed fibers. Braus discloses that short fibers, since the disclosed length is less than 500 microns, are contained in the matrix layer 3 (column 3, line 63 through column 4, line 7 and column 5, lines 49-58).

Appellant argues that Braus fails to disclose that 20% or more wt.% of the short fibers by weight of a total amount of said short fibers are oriented in a direction along which the magnitude of a load is large. It is to be noted that applicant does not specify in the claim the particular direction of the load. It is further noted that a disclosure wherein all or most of the fibers are oriented in a longitudinal or transverse direction would read on claim 22 as written because no direction of the load is recited, applicant recites an axial (transverse) orientation in dependent claim 23. Wegner specifically discloses that all or most of the short fibers are oriented either in a longitudinal direction or a transverse direction (column 5, lines 40-50). Appellant has pointed out the column 4, lines 61-68 of Wegner does not disclose any orientation, the examiner agrees. However, column 5, lines 40-50 of Wegner specifically discloses that all or most of the short fibers are oriented either in a longitudinal direction or a transverse direction. Moreover, the limitation wherein 20% or more wt.% of the short fibers by weight of a total amount of said short fibers are oriented in a direction along which the magnitude of a load is large is an intended use and since Wegner discloses specific orientations of longitudinal and transverse orientations, the invention of Wegner is capable accepting a load in a particular direction.

With regard to Runton, appellant has stated that Runton does not disclose the orientation of the short fibers, the examiner agrees. Appellant argues that the supposed wavy sectional shape of Runton really does not exist. However, claim 22 does not recited a wavy sectional shape, applicant does recite a wavy sectional shape in dependent claim 28. Runton clearly illustrated a wavy shape in Figs. 4-5. Appellant has compared Fig. 2 of the instant application with Fig. 3 and alleges that the difference is clear. However, Figs. 4-5 of Runton represent transverse and longitudinal cross-sections of Fig. 3 (column 1, lines 55-70) and it is clear that Figs. 4-5 of Runton illustrate a wavy section shape.

Appellant argues that Hartel et al. show fibers oriented in different directions. However, Hartel discloses an outer layer wherein all of the fibers are oriented circumferentially (2 from Fig. 1) and a middle layer wherein all of the fibers are oriented transversely (3 from Fig. 1) (see column 3, lines 22-36). Appellant argues that Hartel is not sufficient to read on claims 22 or 24. Hartel was only applied to claim 24 and was used to show that 20% or more of fibers oriented in a circumferential direction is known and obvious.

Appellant has argued that Stiff et al. do not disclose 20 or more wt.% of fibers oriented in an axial direction and can not read on claims 22 and 25. However, Stiff et al. was not applied against independent claim 22 and claim 25 does not recite an axial direction but rather a spiral direction. Stiff et al. disclose all of the filament/fibers in a spiral orientation in an annular member, a bearing (Fig. 4, column 5, lines 32-67). Stiff

was used to show that 20% or more of fibers oriented in a spiral direction is known and obvious.

Appellant has argued that Board, Jr. does not disclose 20 or more wt.% of fibers oriented in an axial direction and can not read on claims 22 and 30-31. However, Board, Jr. was not applied against independent claim 22 and claims 30-31 do not recite any orientation. Board, Jr. disclose an annular member wherein plural filaments (long aramid fibers) are stitched to said composite structure (column 6, lines 33-68 and Figs. 1-3). Board, Jr. was applied against claims 30-31 to show that an annular member wherein plural filaments (long aramid fibers) are stitched to said composite structure is known and obvious.

Appellant has argued that Board, Jr. does not disclose 20 or more wt.% of fibers oriented in an axial direction and can not read on claims 22 and 32. However, Board, Jr. was not applied against independent claim 22 and dependent claim 32 does not recite any orientation. Sumiyoshi et al. disclose an annular member wherein at least one surface of said annular sliding fluoroplastics member is covered with an expanded graphite sheet (column 3, lines 1-68, column 7, lines 1-68 and Figs. 1-4) which reads on dependent claim 32.

#### **(11) Related Proceeding(s) Appendix**

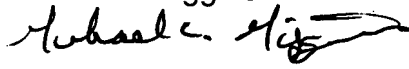
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Art Unit: 1772

Michael C. Miggins



Conferees:

/Jennifer Michener/

Quality Assurance Specialist, TC 1700



Nasser Ahmad